



# Robust, long-life modular buildings for rail traction power, communication and signalling equipment

Bespoke modular substations, signalling and communications equipment buildings manufactured to meet Network Rail quality standards and designed for rapid, safe installation on live trackside sites. Portastor offers a complete project-managed, turn-key solution from a single supplier to save you time and money.





# Fully pre-equipped building solutions for all essential rail power and control equipment

Portastor designs, manufactures and installs high-quality, robust, integrated equipment housings for a whole range of demanding applications in the rail industry.

For more than 40 years we have worked with the industry to develop innovative solutions to the challenges associated with trackside construction, from low-maintenance stainless steel buildings to provide a 60-year life, to high-capacity substations to accommodate the latest air-insulated switchgear (AIS).

The range of equipment housings we provide for rail projects includes traction power substations and associated rectifier housings, relocatable equipment buildings (REBs) and signalling and communications equipment rooms (SERs/CERs) as well as auxiliary equipment enclosures (AEE) for protection and control equipment and power supply units (PSU) to provide back-up power.

All Portastor rail buildings are CE marked and designed to meet Network Rail Standard 21030. They are fully fitted out with OEM equipment and can be tested at the Portastor factory, away from the live trackside environment. This provides complete plug-and-play buildings that can be installed quickly and safely on site within limited track possession time frames.

Portastor equipment housings are suitable for applications across the whole range of rail-based transportation systems, including inner-city tramways, light railways and monorail systems.

## Our clients:

- » Network Rail
- » London Underground
- » London Overground

## OEMs:

- » ABB
- » Balfour Beatty
- » Hawker Siddeley
- » Schneider- Electric
- » Siemens

## Rectifier

### manufacturers:

- » Ultra pmes
- » Transformer and Rectifiers

## Engineering, procurement and construction (EPC) contractors:

- » Alstom
- » Amec
- » Amey
- » Babcock
- » Balfour Beatty
- » Bilfinger
- » Carillion
- » Costain
- » HVMS
- » Morgan Sindall
- » Mott McDonald
- » C Spencer
- » Taylor Woodrow

## Benefits of using Portastor at a glance:

- » Comply with all Network Rail Standards
- » All buildings are CE marked
- » Robust buildings designed for 60 years
- » Range of OEM solutions including switchgear, communications and control equipment
- » Extensive rail experience
- » Large site for fit out and storage

# Prestigious parent company – for your peace of mind

Portastor is a member of the Shepherd Group, one of the UK's leading family-owned businesses, with a 120-year history of quality craftsmanship in the construction and manufacturing sectors.

The Shepherd Group is a stable and growing business, with a strong ethos of integrity, openness and honesty. Today, the company is a diversified business leader in construction, mechanical and electrical engineering, modular buildings and bulk materials handling, delivered through strong brands including Portakabin, SES and Portasillo.

Such a well-established and reputable parent group gives you the assurance of a financially secure supplier with unrivalled experience in delivering major projects and a dedication to sustainability and corporate responsibility.

**Portakabin**

Quality - this time - next time - every time

Modular buildings  
expertise – from the  
market leaders

Shepherd Group company  
Portakabin is the pioneer  
and acknowledged market  
leader in the design and  
construction of modular  
buildings.

## Why choose modular off-site construction?

Choosing factory-built modular buildings for your equipment housings offers significant safety, time, cost and quality benefits.



### HEALTH & SAFETY

Constructed in a **controlled environment** away from the operational site, minimises health and safety risks.



### 50% FASTER

Projects can be **delivered in half the time** of traditional site-based construction through factory manufacturing and parallel site works.



### WEATHER PROOF

Factory-based manufacturing means construction is not affected by on-site weather conditions, ensuring **no loss of production time**.



### PLUG & PLAY

With up to **95%** of construction and fitting out completed off site, buildings are delivered ready for fast, safe installation.



### OFF-SITE FIT-OUT

Our extensive site means we can complete **first and second** fit-out stages before delivery to your site, removing the project from your critical path



### REDUCED DISRUPTION

By installing equipment off-site, time delays and on-site **disruption are minimised**.



### ECONOMIES OF SCALE

Consistent, repeatable standard modular buildings **reduce production costs** by improving operational efficiencies.



### SUPERIOR QUALITY

Factory-based quality control delivers **consistent building quality** and lowers whole lifecycle costs.



### REDUCES SITE LABOUR

Significantly **improving health and safety** and minimising disruption on site.



### ENVIRONMENT

Efficient manufacturing in the factory **eliminates most material waste** and minimises noise, dust and traffic on site.



# Plug-and-play equipment housings for every trackside application

For more than 40 years, Portastor has been working with the rail industry to design and deliver high-quality protective equipment housings for essential rail power, communication and signalling equipment.



## Traction power substations:

Protective housings for all gas and air-insulated switchgear

Portastor provides secure substation buildings to house switchgear associated with providing power to the tracks. We have vast experience of manufacturing AC and DC substations to power the third rail on Southern Zone networks, as well as AC power for overhead lines (OHLE) across the rest of the UK. As legislation drives

the transition from gas-insulated (GIS) to air-insulated switchgear (AIS), Portastor has worked with Network Rail to develop prototype high-capacity buildings up to 40 metres long to accommodate larger AIS systems.

We have also developed auxiliary equipment enclosure (AEE) buildings to house protection and control equipment associated with new structure-mounted outdoor switchgear (SMOS).

Some switchgear buildings are designed to meet rail gauge standards, enabling them to be transported direct to site by rail. This facilitates efficient, safe offloading and installation within limited track possession time windows. Large multi-module buildings can be assembled at the Portastor factory for witnessed testing, then disassembled and transported as separate modules to site for simple reassembly and final testing.

## Communication and signalling rooms:

Lightweight, long-life buildings to house safety-critical equipment

Portastor has developed reliable, tried and tested solutions for relocatable equipment buildings (REBs) and signalling and communications equipment rooms (SERs/CERs) to securely house safety-critical signalling equipment. These lightweight buildings meet the sector's

## CASE STUDY

Portastor fitted out and pre-commissioned 27 Siemens AC switchgear rail gauge housings, ranging in size from 17m<sup>2</sup> to 30m<sup>2</sup>, for the Network Rail Southern Zone upgrade. Portastor was chosen for its ability to simultaneously fit out the large number of buildings required and manage the high throughput necessary to complete the work on schedule. Portastor manufactures all their switchgear housing to Network Rail standard 21030.

### Siemens/Network Rail Southern Zone

stringent requirements for health and safety, materials selection, fire resistance and electrical engineering standards.

Our corrosion-resistant, low-maintenance stainless steel buildings are the preferred option in locations where access for maintenance is difficult, disruptive and potentially hazardous. Every element of these buildings is made from stainless steel, providing a structure designed to last for at least 60 years.

#### Back-up power and associated buildings:

Versatile building solutions for multiple applications

Portastor buildings are used to create power supply unit (PSU) rooms to provide back-up power to stations or in remote locations where generators are required. For Southern Zone AC/DC power supplies, we also provide the rectifier housings associated with every substation. These can be designed to provide a 40-year or 60-year design life, and are fitted out with transformers and rectifiers. The buildings are naturally ventilated, using cool air from underneath the rectifiers to maintain equipment at optimum temperatures.

**“It’s extremely beneficial for us to be able to complete the factory acceptance tests at Portastor, away from the live trackside site. It means the buildings arrive on location ready for rapid connection and final testing, significantly reducing the time, cost and risk associated with the trackside installation phase.”**

#### ABB Ltd

### Contact the modular equipment housing specialists

Contact the experienced team at Portastor to find out how we can design, build and install fully packaged modular buildings for your plant, anywhere in the world.

**TEL:** +44 (0) 1904 650 888



# Leave everything to Portastor – from consultation to installation

## Complete end-to-end services:

Portastor offers a complete end-to-end 'consultation-to-commissioning' service. We manage every stage of your project from initial design and consultation, through to manufacturing, first and second fit, testing, delivery, installation and final handover.

Our comprehensive project-management capabilities mean you have a single point of contact for your entire project, simplifying the process and providing total traceability and accountability from an experienced supplier.

- » Bespoke design
- » Installation of all OEM equipment
- » Interconnections
- » Factory acceptance testing (FAT)
- » Logistics and transport planning and management
- » Building installation on site
- » Commissioning
- » Servicing and maintenance
- » Trackside working
- » Facilities management

### Design expertise to create high-quality rail gauge buildings

Portastor has the in-house design expertise to create buildings that meet your exact specifications and comply with all Network Rail, OEM and other industry-specific standards. We have vast experience of manufacturing buildings to meet the stringent specifications of National Rail Standard 21030.

The versatility of Portastor modular building systems means they can be adapted to fit any site footprint, including congested trackside locations where space is limited.

As well as providing your plug-and-play buildings, we can supply and install all steelwork structures (including platform and stairs). Incorporating steelwork structures to support your building above ground level, allows for easy cable entry without the need for costly excavations, as well as protecting your equipment from flooding.

### Safe, precision fitting out and testing under factory conditions

The vast manufacturing site at Portastor enables us to store and fit out equipment housings on a large scale for any project. All the OEM equipment you require can be fitted by our experienced in-house teams and fully factory tested prior to despatch. We can also install any HVAC systems required to maintain equipment at optimum working temperatures.

## CASE STUDY

As part of its West Coast Mainline modernisation programme, Network Rail needed to provide upgraded 25kV switchgear substations to allow trains with more carriages and more frequent trains to use the route. ABB chose Portastor to provide 11 modular substation buildings for the section of line between Staffordshire and Cumbria. The buildings ranged from 8.5m-long single modules up to 30m-long double-module buildings, all fitted out at the Portastor factory before delivery to site.

### ABB/West Coast Mainline

Fitting out in our facilities keeps this complex engineering work out of your critical path and away from the potentially hazardous trackside environment. It also guarantees you the consistently high standards of precision and accuracy that can only be achieved in a factory environment.

#### Fast, efficient trackside installation and commissioning

Your fully fitted equipment housings will be delivered, by rail if required, to site with all OEM equipment pre-installed and factory tested. Portastor then manages the efficient installation and final testing phase on site during limited track possession periods, ensuring disruption is minimised and buildings installed to meet all your quality, safety and performance criteria.

**“We knew Portastor understood Network Rail’s working practices and operational demands, which is essential to ensure these large projects run smoothly.”**

**ABB**

#### Independent accreditations

**ISO 9001, 14001 & 18001:** Portastor manufacturing processes, quality, health and safety and environmental management systems are accredited to internationally recognised standards.

**Electrical system standards:** Portastor electrical system installations meet international standards including British Standards (BS), American National Standards Institute (ANSI) and International Electrotechnical Commission (IEC) standards.

**CE marking:** To meet European harmonisation standards, all Portastor modular buildings are CE marked. Mandatory from July 2014.

**“The way we work with Portastor is very important to help us reduce risks on the trackside sites, improve safety and also minimise the costs associated with working trackside.”**

**Mike Barnby, Pre-Construction Manager,  
Siemens**



**Portastor**



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Portastor quality assurance conforms to ISO 9001.

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